

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Withdrawn) A method of producing a cloned pig expressing a green fluorescent protein gene, comprising the steps of:
  - (a) preparing a nuclear donor cell by culturing a cell line collected from a pig;
  - (b) mixing pEFGP-N1 and a lipid component or non-lipid cationic polymer vehicle to form lipid (or cationic polymer)-DNA complexes, and adding the resulting complexes to a culture medium of the nuclear donor cell and further culturing the nuclear donor cell to introduce said GFP gene thereinto and express said GFP gene therein;
  - (c) transferring the transfected nuclear donor cell into an enucleated pig recipient oocyte to generate a transgenic nuclear transfer embryo, and activating said nuclear transfer embryo; and
  - (d) transplanting the nuclear transfer embryo into a surrogate mother pig to produce live offspring.
2. (Withdrawn) The method as set forth in claim 1, wherein the lipid component at the step (b) is FuGENE 6 or LipofectAminePlus.
3. (Withdrawn) The method as set forth in claim 1, wherein the non-lipid cationic polymer is ExGen 500.
4. (Withdrawn) A porcine nuclear transfer embryo "SNU-P1 [Porcine NT Embryo]", which is prepared according to the steps (a) to (c) of claim 1, and deposited at KCTC (Korean Collection for Type Cultures) under accesssion number KCTC 10145BP.

5. (Withdrawn) A cloned pig expressing a green fluorescent protein gene, which is produced from the porcine nuclear transfer embryo "SNU-P1 [Porcine NT Embryo]" of claim 6 by performing the step (d) of claim 1.

6.-8. Canceled.

9. (Currently Amended) ~~The method as set forth in claim 6, wherein the gene targeting vector at the step (b) comprises a nucleic acid sequence corresponding to a part of intron 8, exon 9 and a part of intron 9 of a GT gene, wherein an Aval-DraIII fragment of said exon 9 is substituted with a nucleic acid sequence encoding a puromycin-resistant gene linked to a SV 40 poly(A) sequence.~~ A method of producing a cloned pig having an alpha-1,3-galactosyltransferase gene knocked out, comprising the steps of: (a) preparing a nuclear donor cell by culturing a somatic cell line collected from a pig; (b) isolating an alpha-1,3-galactosyltransferase (GT) gene clone from a pig genomic BAC library through a PCR method using primers prepared based on a pig GT cDNA sequence (GeneBank Accession No.: AF221517), and constructing a gene targeting vector using the isolated GT gene, wherein the vector carries a GT gene modified by substituting a portion of a GT gene with a gene encoding a selectable marker by homologous recombination to suppress expression of a normal GT protein; (c) mixing the vector with a lipid or non-lipid component to form lipid (or non-lipid)-DNA complexes, and adding the resulting complexes to a culture medium of the nuclear donor cell to allow gene targeting by introducing the recombinant GT gene into the nuclear donor cell; (d) transferring the nuclear donor cells transfected with the recombinant GT gene into an enucleated pig recipient oocyte to generate a transgenic nuclear transfer embryo, and activating the nuclear transfer embryo; and (e) transplanting the nuclear transfer embryo into a surrogate mother pig to produce live offspring, wherein the gene targeting vector at the step (b) comprises a nucleic acid sequence corresponding to a part of intron 8, exon 9 and a part of intron 9 of a GT gene, wherein an Aval-DraIII fragment of said exon 9 is substituted with a nucleic acid sequence encoding a puromycin-resistant gene linked to an SV 40 poly(A) sequence.

10. (Currently Amended) The method as set forth in claim 9-6, wherein the lipid component medium of the step (c) is FuGENE6.

11. (Currently Amended) A porcine nuclear transfer embryo "SNU-P2 [Porcine NT Embryo]", which is prepared according to the steps (a) to (d) of claim 9-6, and deposited KCTC (Korean Collection for Type Cultures) under accession number KCTC 10146 BP-~~10146~~BP.

12. (Currently Amended) A cloned pig having an alpha-1,3-galactosyltransferase gene knocked out, which is produced from the porcine nuclear transfer embryo "SNU-P2 [Porcine NT Embryo]" of claim 9 ~~11~~ by transplanting the nuclear transfer embryo into a surrogate mother pig to produce live offspring performing the method at the step (c) of claim 9.

13. Canceled.